SUMMARY FOR FE-08-06
SELECTED AND POSSIBLE CONTRIBUTING FACTORS

SELECTED FACTORS

Railroad: Massachusetts Bay Commuter Railroad (MBAX)
Location: Gloucester, Massachusetts
Region: 1

Month: June
Date: June 22, 2006
Time: 3:10 p.m., EST

Data for Fatally Injured Employee(s)

Trackman
36 years old
7 years of service
Last rules training: May 31, 2005
Last safety training: March 16, 2006
Last physical: No Record
Last relevant efficiency testing: March 28, 2006

Data for All Employees (Craft, Positions, Activity)

Craft: Maintenance of Way (MOW)

Positions:

MOW Crew
(40 total MOW Employees)
16 Roadway Maintenance Machine Operators
Two Track Foremen
Remainder employees: Trackmen

Principal Employees
Fatally Injured Trackman
People Mover Operator
Clip Applicator Operator

Activity

Replacing cross ties

SUMMARY FOR FE-08-06 CONTINUED
SELECTED FACTORS CONTINUED

EVENT

A Trackman was fatally injured when struck by on-track equipment while replacing cross ties.

POSSIBLE CONTRIBUTING FACTORS

PCF No. 1

The People Mover Operator failed to control the movement to permit stopping within ½ the range of vision short of Roadway Workers and rail equipment occupying or fouling the track. Following brake tests, investigators concluded that even with some oil on the rail, as had been observed by two MOW workers, the People Mover Operator had ample time to stop, avoiding the collision with the clip applicator.

PCF No. 2

The People Mover Operator did not sound the horn as he approached the clip applicator. (He told investigators that he could not find the horn.) It is possible that had the horn been sounded, the Trackman could have moved to a place of safety.

PCF No. 3

While the Clip Applicator Operator had not broken any operating rules and while his equipment was properly located at the time of the incident, the amount of alcohol estimated to be present in his body at the time of the incident suggests that he may have been adversely impacted in his ability to recognize an unsafe situation and take appropriate preventive action. In addition, depending on how recently he had used marijuana (he was positive at 84 ng/ml in urine), this drug as well may have contributed to any decrement in his judgment and/or performance.

REPORT: **FE-08-06**

RAILROAD: Massachusetts Bay Commuter Railroad (MBAX)

LOCATION: Gloucester, Massachusetts

DATE &TIME: June 22, 2006; 3:10 p.m., EST

EVENT[1]: A Trackman was fatally injured when struck by on-track equipment while replacing cross ties.

EMPLOYEE:	Craft:	Maintenance of Way
	Occupation:	Trackman
	Age**:**	36
	Length of Service:	7 Years
	Last Rules Training:	May 31, 2005
	Last Safety Training:	March 16, 2006
	Last Physical:	No Record
	Last Relevant Efficiency Testing:	March 28, 2006

CIRCUMSTANCES PRIOR TO THE ACCIDENT

At 7:30 a.m., EST, on June 22, 2006, 40 MBAX Maintenance Employees reported for a regularly assigned shift at the commuter rail station in Manchester, Massachusetts (milepost 25.5). The 40-man gang was assigned duties replacing cross ties on the MBAX Gloucester Branch on Main Track No. 2.

The MBAX Gloucester branch begins at milepost 18.7 in Beverly, Massachusetts and extends geographically north and eastward, ending at milepost 35.3 in Rockport, Massachusetts. The Gloucester Branch consists of Main Track No. 1 and Main Track No. 2 with a maximum authorized speed of 65 mph for passenger trains. The timetable direction, which is used throughout this report, is east.

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[1] "Event" is defined as "occurrence that immediately precedes and directly results in the fatality." Possible contributing factors are identified in the following report and attached summary.

Shortly after reporting for duty, one of the two Foremen assigned to the gang gave a safety briefing**,** as required by the railroad. The Foremen discussed the daily safety rule and warned about fouling the adjacent track when getting on and off equipment. The gang was assigned 16 roadway maintenance machines. After the briefing, the Roadway Maintenance Machine Operators prepared their machines for the day's work.

At approximately 9:40 a.m., the Track Foreman was issued a NORAC Form D line 2 authority to operate east on Main Track No. 1 at Manchester. In accordance with Federal Roadway Worker Protection regulations, the Foreman then provided an on-track safety briefing explaining to the gang the limits of the Form D authority. The 16 roadway maintenance machines were then moved out of Manchester Yard onto Main Track No. 1.

At approximately 9:42 a.m., the Foreman was issued a NORAC Form D line 4 authority with Main Track No. 2 out of service between Manchester Crossover (milepost 25.6) and CP Wilson (milepost 31.0). The gang traveled east approximately 400 feet and crossed over to Main Track No. 2 at Manchester Crossover. They continued to travel east on Main Track No. 2 approximately 3 ½ miles, stopping at milepost 29.3 to start the tie replacement work. This work progressed eastward on Main Track No. 2.

During the tie replacement, the last three roadway maintenance machines involved in the work were a clip applicator, followed by a Kershaw personnel transport (people mover), and a Kershaw ballast regulator. The people mover is used to transport employees and supplies to and from the work location. **Four Trackmen were assigned duties setting clips on the tie plates ahead of the clip applicator.** The people mover was parked at milepost 29.3. **The Ballast Regulator Operator started working at the west end of the work location, replacing shoulder ballast from west to east.**

Each time the **Ballast Regulator Operator** arrived at the parked people mover, he would move it ahead to the clip applicator, then walk back to the ballast regulator and continue replacing ballast behind the gang working east. The process of moving the people mover ahead was a normal procedure which occurred several times throughout the course of the day.

At approximately 12:10 p.m., the gang stopped work for a 20-minute lunch period and then returned to work at 12:30 p.m.

At approximately 3:00 p.m., the tie replacement work had progressed eastward to milepost 30.1, 288 feet east of the Stanwood Avenue highway-rail grade crossing. Shortly after 3:00 p.m., the **Clip Applicator Operator** was the last of the Maintenance Machine Operators to arrive at this location and was waiting for the others ahead to move further east.

At some point prior to 3 p.m., the **People Mover Operator**, which was the second to last Maintenance Machine Operator in the group, moved east to milepost 30.0, which is 232 feet

west of Stanwood Avenue crossing. The people mover was parked with the brakes applied and the engine at idle.

At approximately 3 p.m., the Ballast Regulator Operator, who was working west of Stanwood Avenue crossing, also finished working up to milepost 30.0, where the people mover had been parked earlier. This required the Ballast Regulator Operator to move the people mover east to the next machine ahead, which was the clip applicator. He boarded the people mover and began moving it east, where it entered a 2-degree, 35-minute curve on an 0.83 percent, descending grade. It continued to travel east on Main Track No. 2 for approximately 262 feet to the Stanwood Avenue crossing. According to an MBAX Foreman who observed the people mover pass over the crossing, the Operator approached the crossing slowly, waited for the crossing gates to come down, and then continued to proceed east.

According to the National Weather Service, the sky was overcast with no rain, the temperature was 81° F, and the wind was blowing from the south - southwest at 12 mph.

THE ACCIDENT

As the People Mover Operator passed over the Stanwood Avenue crossing, one of the four maintenance employees, assigned to set clips for the clip applicator, walked from the east end to the west end of the clip applicator and entered the gage of the track to get a clip from the rear of the machine. **As the Maintenance Employee stood behind the clip applicator, he was facing east with his back to the approaching people mover. The Clip Applicator Operator was sitting in the operator's seat facing east and was unaware of the approaching people mover. Immediately prior to the accident, the clip applicator was stationary with the engine in idle.**

The people mover passed over Stanwood Avenue crossing and traveled east 288 feet, striking the clip applicator and pinning the Trackman between the two machines. As a result of the impact, the clip applicator was shoved east about five feet. Three maintenance employees working east of the clip applicator jumped from the path of the clip applicator to avoid being struck.

Several Trackmen in the area heard the impact of the two machines and responded. As they arrived at the accident site, they found the people mover and the clip applicator locked together with a Trackman pinned between the two machines. Emergency calls were made to the **Train Dispatcher** by radio and emergency responders by telephone.

The Trackmen attempted to separate the two machines by pushing them, but they would not separate. At that point, the People Mover Operator stepped back from the scene and was then asked if he could operate the ballast regulator. The People Mover Operator responded that he was okay to move the ballast regulator and then took it to the West Gloucester Station. **Track jacks were then used to separate the two machines and free the injured Trackman. After**

the Trackman was freed, two of his co-workers applied pressure to his wounds to stop the bleeding.

When Gloucester Fire and Rescue arrived at the scene, they backed a truck onto Main Track No. 1 from Stanwood Avenue east to the accident location. The injured Trackman was moved west in the truck back to Stanwood Avenue crossing and was transferred into a waiting ambulance. He was then transported to Addison Gilbert Hospital in Gloucester, Massachusetts, where he was pronounced dead at 4 p.m. The People Mover Operator came back to the scene after the Trackman had been removed.

Emergency response personnel responding to the accident included Gloucester Fire and Rescue, the Gloucester Police, the Massachusetts State Police, and the MBTA Transit Police.

POST-ACCIDENT INVESTIGATION

According to the Massachusetts State Police, MBAX officials tested the brakes on the people mover on the day of the accident at the same location. The test was conducted under the same conditions that existed when the accident occurred, except that the speed during the test was estimated at between 10 and 12 mph. The speeds during this test were estimated because the people mover does not have a speedometer. There was some evidence of oil spotting on the rail**.** The people mover stopped at a distance of 26 feet, 2 inches. The horn was also tested at this time and found to be operating properly.

On June 23, 2006, FRA conducted an inspection of the equipment involved in the accident. Photographs were taken of the people mover at Manchester Yard. It was observed that the people mover was permanently attached to a trailer. The weight of the people mover was stenciled on the side of the machine at 22,000 pounds. MBAX officials estimated that the weight of the trailer was 8,000 pounds. The trailer was connected to the people mover with a draw bar and two air lines to supply air to the brakes on one of the two axles on the trailer. The brakes were inspected and showed no evidence of unusual wear. There was no evidence of any visible damage to the people mover as a result of the accident. According to the MBAX Maintenance Employee who initially operated the people mover to the work location on the day of the accident, the machine operated normally, and he took no exception to its condition. The people mover was in compliance with all applicable portions of the On-Track Roadway Maintenance Machine regulation.

Photographs were taken of the clip applicator which was located at Stanwood Avenue crossing adjacent to Main Track No. 2. The clip applicator was stenciled as weighing 4,700 pounds, a weight which exempts the machine from the requirements of the On-Track Roadway Maintenance Machine regulation.

On June 26, 2006, FRA investigators observed as MBAX officials conducted a second test of the brakes on the people mover. The test was conducted at 1:06 p.m., and the rail was dry with no evidence of oil on the rail. The brake test was near the location of the accident, east of Stanwood

Avenue crossing. The people mover was moved from Stanwood Avenue east, a distance of 118 feet at full throttle. The brakes were applied fully, and the people mover stopped in a distance of 29 feet, 7 inches.

FRA conducted 10 interviews of MBAX employees assigned to the production tie gang. These interviews revealed that the only witness to the accident was the People Mover Operator. All other members of the gang were working east of the accident location at the time of the accident. Four members of the gang who were working immediately east of the clip applicator heard the impact of the two machines. Three of those gang members had to jump from the track to avoid being struck by the clip applicator which was shoved east about five feet by the impact.

Six of the ten gang members interviewed stated that they had interacted with the People Mover Operator, the Clip Applicator Operator, and the deceased Trackman either during the job briefing or at some point prior to the accident. None of the six gang members took any exception to their physical condition. One gang member who was working near the clip applicator at the time of the accident observed seeing oil on the rail.

According to the People Mover Operator, the people mover was moved east to Stanwood Avenue crossing slowly. When the crossing gates came down, he continued moving the machine east. The throttle was set between 3/4 and full. He estimated his speed at 5 mph. He described the track from Stanwood Avenue east as being tangent with a slight descending grade. He also stated that there was vegetation, but it was not obscuring his view of the track. He said he could see quite a distance down the track; in fact, he could see the clip applicator which he estimated to be about 500 feet ahead. He couldn't tell if it was standing or moving.

According to the People Mover Operator, as he approached the clip applicator, he applied the brakes on the people mover in sufficient time to stop short of the machine; however, the machine slid. He cut the throttle and dumped the air, but kept sliding. He stated he did not blow the horn because he could not find it. The people mover then impacted the clip applicator, pinning the Trackman between the two machines.

He stated that he observed oil on the rail after the accident occurred. He described this as a normal condition, as there were several other machines working ahead. The Operator said he took this type of track condition into account while moving the people mover and that on the day of the accident he was moving the machine without excessive speed and watching ahead.

According to the People Mover Operator, MBAX does have some operating rules that govern the operation of roadway maintenance machines. He stated that one specific rule requires stopping within one half the range of vision under normal conditions. The Operator stated that he wasn't able to stop because the people mover was sliding due to track conditions.

49 CFR 214.313(a) states in part that each Roadway Worker is responsible for following the on-track safety rules of the railroad upon which the roadway worker is located.

On the day of the accident, the MBAX production tie gang was working with exclusive track occupancy on Main Track No. 2. MBAX Roadway Worker Protection Rule 321(d) and NORAC Operating Rule 133(d) require that all movements within out-of-service limits be made at restricted speed. NORAC Operating Rule 80(a) defines restricted speed and requires that Operators of roadway maintenance machines control their movements to permit stopping within one half the range of vision, short of other trains or railroad equipment occupying or fouling the track.

MBAX Roadway Worker Protection Rule 341(d) requires that a 10-foot clearance be maintained between two or more pieces of equipment unless otherwise instructed by the Employee-in-charge. Furthermore, MBAX Roadway Worker Protection Rule 341(e) requires that while equipment is in working mode, Roadway Workers must stay 10 feet from its working area unless otherwise specified by the Operator. According to the Clip Applicator Operator, the deceased did not notify him before he entered the10-foot zone behind the machine.

The People Mover Operator indicated that on the day of the accident, he was well rested and felt alert. He did not feel fatigued.

The People Mover Operator stated that he had 27 years of railroad service as a track inspector and Foreman for various railroads, including MBAX. He said that he had operated nearly all the different varieties of roadway maintenance machines and that he has operated the people mover nearly every day for approximately 10 years.

The People Mover Operator stated the he had received annual roadway worker protection training over the last 10 years; however, he also stated that he had received no formal training on operating roadway maintenance machines, only on-the-job training.

The Federal Roadway Worker Protection regulation requires that all Roadway Workers and Roadway Maintenance Machine Operators receive annual training. On August 15, 2006, FRA conducted a review of MBAX's annual roadway worker and roadway maintenance machine training program. The review determined that their program consisted of a power point presentation with 60 slides, four of which specifically addressed roadway maintenance machine training. Following the presentation, all participants were required to take and pass a 25-question test. The People Mover Operator, the Clip Applicator Operator, and the deceased Trackman all passed the required test.

In order for MBAX Maintenance Employees to become qualified to operate a specific roadway maintenance machine, they are required to receive on-the-job training. MBAX maintains a list of individuals who are designated as qualified to operate roadway maintenance machines. The list contains all of the railroad's roadway maintenance machines and each individual who is

designated as qualified on each machine. MBAX qualification records indicated that the Clipper and the People Mover Operators were qualified to operate these machines. FRA's review of

MBAX's training and qualifications for Roadway Worker and Roadway Maintenance Machine Operators was in compliance with the Federal Roadway Worker Protection regulations.

On Sept. 1, 2006, FRA concluded a review of MBAX efficiency testing records for the time period of July 2003 through May 2006. The review included records for the Clip Applicator and the People Mover Operators, the two Production Tie Gang Foremen, and the deceased Trackman. The results of this review indicated that observations were conducted on all the maintenance employees. The records indicated that there were seven instances of non-compliance with MBAX Roadway Worker Protection rules and railroad operating rules. Two of these instances were recorded as a result of a collision that occurred on Nov. 1, 2004. The collision involved the People Mover Operator and occurred between two roadway maintenance machines. Although the collision occurred on November 1, 2004, the observations were not recorded until Nov. 26, 2004. There were two other instances of non-compliance recorded for the People Mover Operator on April 26, 2006. According to the Road Master who conducted these observations, these failures were entered into the database in error. The total number of tests conducted on these five individuals was 159, with eight valid failures.

Federal post-accident toxicological testing under 49 CFR Part 219 was performed on the deceased Trackman, since he was killed during an on-track movement. The results of this testing showed positive for a low concentration of marijuana in his blood. No urine or tissues from the deceased were tested by FRA.

Company post-accident toxicological testing was performed on the Clip Applicator Operator and the People Mover Operator, since neither performed Hours of Service Act functions. The test results of the Clip Applicator Operator showed positive at 0.025 percent for alcohol in breath and 84 ng/ml for marijuana metabolite in urine. The urine test results for the People Mover Operator indicated the specimen was negative, but it was significantly dilute.

After reviewing the accident investigation findings and the laboratory results, FRA alcohol and drug experts provided the following comments:

- Collectively, these findings are of significant safety concern. All three of these MOW workers tested positive for alcohol and/or illegal drugs, or provided a specimen that was so dilute that it was suspect.

- The deceased Trackman, the only person tested under Federal authority, had a parent THC level of 1.3 ng/ml in blood, but was negative (below cutoff) for the carboxyl metabolite. This finding suggests a residual level often found in persons who chronically and routinely use marijuana. However, this result provides insufficient toxicological evidence to determine whether the Trackman's previous use of marijuana caused a decrement of judgment or performance which contributed to his death.

- The Clip Applicator Operator tested positive on a company breath test for alcohol at 0.025 percent 90 minutes after this accident. Assuming that he had no opportunity to consume alcohol after the accident, his alcohol concentration should have been decreasing since the accident occurred. Using published values for the lower (0.009 percent/hour) and higher (0.029 percent/hour) extremes of ethanol elimination, his blood ethanol concentration would have been between 0.038 percent and 0.068 percent at the time of the accident. These extremes incorporate a 95 percent confidence level to the extrapolated value. Assuming also that the Operator did not consume alcohol while on duty, his estimated blood alcohol concentration was between 0.10 percent and 0.28 percent when he reported to work. This individual was also positive for marijuana metabolite at 84 ng/ml as measured in urine.

  While this Operator apparently did not break any operating rules and his equipment was properly located at the time of the accident, the amount of alcohol estimated to be present in his body at the time of the accident suggests that he may have been adversely impacted in his ability to recognize an unsafe situation and take appropriate preventive action. Although a urine test result does not reveal recency of use, it is also possible that the effects of his previous use of marijuana could have had an impact on his judgment and/or performance depending on when and how much of the drug he had used.

- The People Mover Operator provided a negative dilute specimen under employer authority. His specimen was diluted at a level that authorized his employer, under company policy, to call him back to provide another specimen to better assure the integrity of the test. To date, this Operator has not reported as required by the employer's Medical Review Officer for a re-collection of his specimen. The lack of a credible specimen and test result is a significant concern.

Analysis and Conclusions

Although the People Mover Operator indicated that there was vegetation along the right-of-way in the area of the accident, it was not obscuring his view of the track ahead. He stated that he could see quite a distance down the track and that he could see the clip applicator and the Trackman, estimated to be about 500 feet away.

On the day of the accident, the horn on the people mover was tested by MBAX officials. The test concluded that it was working as intended; however, the People Mover Operator did not sound the horn as he approached the clip applicator because he stated that he could not find it. It is possible that if the horn had been sounded, the Trackman could have moved to a place of safety.

It was determined that, because of its weight, the clip applicator does not fall under the requirements of the Federal On-Track Roadway Maintenance Machine regulation. However, FRA's inspection found no visible damage to the clip applicator as a result of the accident and found nothing that would have contributed to the cause or severity of the accident.

The people mover does fall under the requirements of the Federal On-Track Maintenance Machine regulation. FRA's inspection of this machine revealed that it was in compliance with all applicable portions of the regulation. Inspectors found nothing that would have contributed to the cause or severity of the accident.

FRA's investigation determined that the People Mover Operator received the required annual Roadway Worker Protection and roadway maintenance machine training. He was listed on MBAX's list of qualified employees to operate the people mover. In addition, it was determined that, during his 27 years of railroad service, the People Mover Operator had extensive experience operating the various roadway maintenance machines, including the people mover.

As a result of the brake tests that were conducted on the people mover, it can be deduced that on the day of the accident, the people mover, with a fully loaded trailer attached, would have needed a distance of approximately 26 to 30 feet to come to a stop. Both brake tests indicated that the People Mover Operator, even with some oil on the rail, had ample time to stop the machine prior to impacting the clip applicator, as he stated he had a clear view of the clip applicator and the deceased Trackman at least 500 feet prior to impact.

Although it was determined that the deceased Trackman violated MBAX's Roadway Worker Protection Rule 341(e), in that he did not notify the Operator prior to stepping into the 10-foot foul zone behind the machine, it was determined that his non-compliance did not play a role in the cause or severity of the accident. This rule is in place to protect maintenance employees from being struck by their own equipment. The clip applicator was stationary; therefore, it was not a threat to the Trackman. Although prior notification is required by the carrier, it would not have changed the position of the Trackman.

As stated above, collectively the findings of the post-accident drug and alcohol tests are a significant safety concern. All three of the MOW workers tested positive for alcohol and/or illegal drugs, or provided a specimen that may not have been consistent with human urine.

The deceased Trackman, the only person tested under Federal authority, had a parent THC level of 1.3 ng/ml in blood, but was negative for the metabolite. This finding suggests a residual level often found in persons who chronically or routinely use marijuana. However, this result provides insufficient toxicological evidence to determine whether the Trackman's previous use of marijuana adversely impacted his judgment or performance in a manner which contributed to his death.

Although there was some evidence that there was oil on the rail, the People Mover Operator stated that he considered this to be a normal condition and that he took this condition into account on the day of the accident by moving the people mover without excessive speed and by watching ahead. He also stated that he was aware of the restricted speed rule. These statements contradict another statement in which he said that he wasn't able to stop because the people mover was sliding due to track condition. FRA's investigation determined that the People Mover Operator was trained on MBAX's Roadway Worker Protection rules, as required by the Federal Roadway Worker Protection regulation.

The People Mover Operator did not comply with MBAX's Roadway Worker Protection Rule No. 341(d), which requires a 10-foot clearance be maintained between two or more pieces of equipment, unless otherwise instructed by the Employee-in-Charge. Further, it was determined that he did not comply with NORAC Operating Rule 133(d), NORAC Operating Rule 80, and MBAX's Roadway Worker Protection Rule 321(d), in that he was required to move at restricted speed and he did not control the movement of the people mover to permit him to stop within ½ the range of vision, short of the clip applicator occupying the track ahead, and the Trackman fouling the track ahead. The People Mover Operator's non-compliance with these rules is the probable cause of this accident.

49 CFR 214.313(a) states in part that each roadway worker is responsible for following the on-track safety rules of the railroad upon which the roadway worker is located. Therefore, the fact that the People Mover Operator did not comply with MBAX's roadway worker protection rules is also a violation of this Federal regulation.

APPLICABLE RULES

NORTHEAST OPERATING RULES ADVISORY COMMITTEE (NORAC) 8TH EDITION

EFFECTIVE JAN. 1, 2003

RULE 80. MOVEMENT AT RESTRICTED SPEED

Movements made at Restricted Speed must apply the following three requirements as the method of operation:

A. Control the movement to permit stopping within one half the range of vision short of:

1. Other trains or railroad equipment occupying or fouling the track;
2. Obstructions;
3. Switches not properly lined for movement;
4. Derails set in derailing position; and
5. Any signal requiring a stop signal.

AND

B. Look out for broken rails and misaligned track.

AND

C. Do not exceed 20 mph outside interlocking limits and 15 mph within interlocking limits. This restriction applies to the entire movement, unless otherwise specified in the rule or instruction that requires restricted speed.

RULE 133(D). OPERATION WITHIN OUT-OF-SERVICE LIMITS

The employee named in Form D line 4 is in charge of the out-of-service limits. ABS, CSS, DCS, and Interlocking rules do not apply within the out-of-service limits. All movements must operate at restricted speed. Interlocking switches within the out-of-service limits must not be operated without permission of the employee in charge.....

MASS BAY COMMUTER RAILROAD
ROADWAY WORKER PROTECTION MANUAL
(which refers to NORAC Operating Rules)
REVISED FEB. 13, 2006

NORAC DEFINITIONS AND ABBREVIATIONS

Restricted Speed: (See NORAC Rule 80 above)

RULE 321(D). REMOVING A TRACK FROM SERVICE

(See NORAC RULE 133(D) above).

RULE 341(D),(E). ROADWAY MAINTENANCE MACHINES (214.341)

MBAX has included in its on-track safety program specific provisions for the safety of roadway workers who operate or work near roadway maintenance machines. These provisions address...

D. When two or more pieces of equipment are working together, they must maintain a 10-foot clearance between each other unless otherwise instructed by the employee in charge; and

E. While equipment is in working mode, roadway workers must stay 10 feet from its working area unless otherwise specified by the Operator.

CODE OF FEDERAL REGULATIONS
PART 214 - RAILROAD WORKPLACE SAFETY
SUBPART C - ROADWAY WORKER PROTECTION

214.313(a) Responsibility of individual roadway workers.

(a) Each roadway worker is responsible for following the on-track safety rules of the railroad upon which the roadway worker is located.